SBI3U1 Unit: Plants-Anatomy, Growth and Function Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **K/U**  **/** | **APP**  **/** | **Comm**  **/** | **T/I**  **/** |

**Summative Test**

1. **MULTIPLE CHOICE: Choose the MOST correct response by circling it.**
2. Which of the following is are ways that plants are used in society?
3. Pharmaceuticals C. Clothing
4. Perfumes D. All of the above
5. Which of the following is not an artificial selection strategy used in plants?
6. Mass Selection C. Cross Breeding
7. Pure line Selection D. Cloning
8. Which of the following is not considered a nutrient for plants?
9. Nitrogen C. Potassium
10. Phosphorus D. Sodium
11. Which of the following processes does not lower plant biodiversity?
12. Primary Succession C. Bioaccumulation
13. Artificial Selection D. Monocultures
14. What kind of tissue is xylem?
15. Dead cells for transporting water.
16. Living cells for transporting sucrose.
17. Dead cells for transporting sucrose.
18. Living cells for transporting water.
19. Parallel veins in a leaf would indicate that it is a \_\_\_\_\_\_\_.
20. Non-vascular plant C. Conifer
21. Monocot D. Dicot
22. A thick cuticle on a leaf usually indicates that it is from a \_\_\_\_\_\_\_climate
23. Wet C. Dry
24. Arctic D. Temperate
25. What do mosses need to live?
26. A constant supply of sunlight.
27. A constant supply of moonlight.
28. A constant supply of fertilizer.
29. A constant supply of water.
30. A runners function is to \_\_\_\_\_\_\_\_.
31. Store starch C. Reproduce
32. Provide Strength D. Transport

**B. TRUE AND FALSE: Choose the most correct response by circling it.**

1. A sunflower is a non-vascular plant. T/F

2. Phloem cells are living cells because translocation is active. T/F

3. A root is covered with a waxy cuticle for protection. T/F

4. A climax community is characterized by its stability. T/F

**C. STRUCTURES: Fill in the chart below. Be sure to explain your reasons for choosing monocot or dicot clearly and succinctly in the “how do you know?” section.**

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| What is this a picture of? | Stem | Leaf | Root |
| What is its purpose in a plant? | Stability/Transport/  Storage | Photosynthesis | Retrieving water/nutrients  Storage |
| Is it a monocot or dicot? | Monocot | Dicot |  |
| How do you know? | Scattered vascular bundles | Net like veins |  |

**D. SHORT ANSWER: Answer the following questions in the space below.**

1. The following graph tracks the amount of corn harvested from Old McDonald’s farm.

This particular farm has only grown corn over the past 10 recorded years. This is because there has been a huge demand for corn in the market.

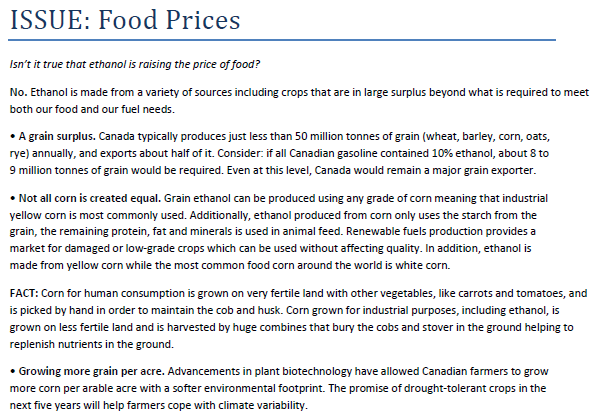
Part I. Analyze the graph and suggest a possible explanation, related to agriculture, to what is causing the trend you see in the graph.

Answer: The farm is employing monocultures as its agricultural practice. Since this farm is only growing corn, the drop in crop production over the years is due to decreasing soil fertility.

Part II. Suggest 2 possible strategies that the farmer can use to improve crop production in the future. Give an explanation to why you selected your particular strategies.

Answer: The corn crop has been exhausting the same type of nutrients from the soil, without giving the soil an opportunity to replenish the assimilated nutrients. Two possible strategies that can help improve this farm’s corn production would be to try crop rotation and use fertilizer to replenish the soil’s nutrients that has used up by the corn.

1. Read the following excerpt from the “Ethanol Fact Sheet” published by the Canadian Renewable Fuels Association:



a. List two things that indicate the bias in the excerpt (2 marks Inquiry):

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b. Based on the information above and your knowledge of biofuels, list two merits of using biofuels and two drawbacks of using biofuels (4 marks Application):

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1. What are vascular tissues? Why can plants with vascular tissues grow taller than plants without these tissues?

Answer: transport tissues. xylem/phloem. because these tissues can carry water from the ground to the leaves.

1. Explain the purpose of stomata. What might we think about a plant with very few stomata? Why?

Answer: control the movement of gasses in/out and water out. that it is in a very dry climate as the smaller number of stomata will allow for less water loss.

1. A farmer has noticed that her crops are growing at a faster rate this season than the season before. In this growing season, there has been more rainfall than usual, the temperature has been generally warmer than previous years, and the farmer began to use pesticides.

Design an experiment to determine the reason her crops are growing faster this year.

Briefly outline your method and how you would determine why her crops are growing faster.

Answer: Have a control plant of the same species as the farmer's crop that grows in conditions similar to those of the last growing season. Then have 3 test plants, one of which will receive water similar to this season's amount, another with this season's amount of water, and another with pesticides (and these are our test variables). Keep all other variables the same and measure which plant grows fastest. If one does grow fastest, then that variable is probably the reason her crops are growing faster.